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Manoharachariella, a new dematiaceous hyphomycetous genus from India

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Abstract — A new hitherto undescribed anamorphic dematiaceous hyphomycetous genus with monoblastic, integrated conidiogenous cells producing solitary, doliiform, obpyriform, dictyoseptate, apiculate, conidia collected on dead twigs in a forest near Darakonda, Andhra Pradesh, India is described as *Manoharachariella* gen. nov.

Key words — macronematous, acroauxic, tiered, apiculus, *Manoharachariella lignicola*

During a survey of hyphomycetes of Andhra Pradesh a new anamorphic genus was collected on unidentified dead twigs in a forest near Darakonda, Distt. Visakhapatnam, Andhra Pradesh, India. It is characterized by the presence of macronematous, mononematous conidiophores with monoblastic, acroauxic, integrated conidiogenous cells producing solitary, doliiform, obpyriform, dictyoseptate, apiculate conidia. A critical microscopic examination of the fungus and perusal of literature (Ellis 1971, 1976; Matsushima 1975, 1983, 1996; Carmichael et al. 1980, Castañeda 1986, Mercado-Sierra 1984, Mercado-Sierra et al. 1997, Vasanth Rao & de Hoog 1986) revealed it to be hitherto undescribed dematiaceous hyphomycetous genus.

Manoharachariella Bagyan., N.K. Rao & Kunwar **gen. nov.**

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Coloniae effusae, tenues, pallide vel modice brunneae, villosae. Mycelio immersum. Hyphis ramosae, brunneae. Stroma, setae et hyphopodiis nullis. Conidiophora macronemata, mononemata, erecta, plerumque flexuosa, sparse septata, hyalina vel subhyalina. Cellulae conidiogenae integratae, acroauxicae, monoblasticae integratis, cylindraceus, hyalino-subhyalino. Conidiis solitaria, sicca, acrogena et acropleurogena, doliiformis vel obpyriformis, rostratis, dictyoseptatis, apiculatus, modice vel atro-brunnea, apice et basi hyalino vel pallide brunnea.

Species Typica: *Manoharachariella lignicola* Bagyan., N.K.Rao & Kunwar

Etymology: The new genus is named in honour of an eminent and reputed mycologist of India, Prof. C. Manoharachary, Department of Botany, Osmania University, Hyderabad, India.

Colonies effuse, thin, pale brown to mid brown, hairy, mycelium immersed, hyphae brown, smooth. Stroma none, setae and hyphopodia absent. Conidiophores macronematous, mononematous, sparsely branched, branches loosely fasciculate, arising laterally and apically from the immersed mycelium, erect, usually flexuous, septate, septa few, hyaline to sub-hyaline. Conidiogenous cells acroauxic, monoblastic, integrated, cylindrical, hyaline to sub-hyaline. Conidia solitary, dry, acrogenous and acropleurogenous, simple, doliiform, obpyriform, ellipsoidal, apiculate, smooth, dictyoseptate, tiered, mid brown to dark brown to blackish brown, apical and basal tiers hyaline to subhyaline.

Manoharachariella lignicola Bagyan., N.K. Rao & Kunwar **sp. nov.** Figs. 1, 2

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Hyphae dense, aggregatae, subepidermalis, 3–4.5 µm lata. Conidiophora usque 35 µm longa, et 3–4.5 µm lata. Conidia 42.5–50.5 µm longa, 25–32 µm in medio saepe, atro-nigro-brunnea, septis obscures, cellulae apicalis unicellularibus, 3.2–5.5 µm longis.

Holotype: On unidentified twigs, Darakonda, Distt. Visakhapatnam, A.P., India, 3 Nov 1984, leg. N.K. Rao, IMI 296857.

Etymology: The fungus colonized unidentified dead twigs hence lignicola.

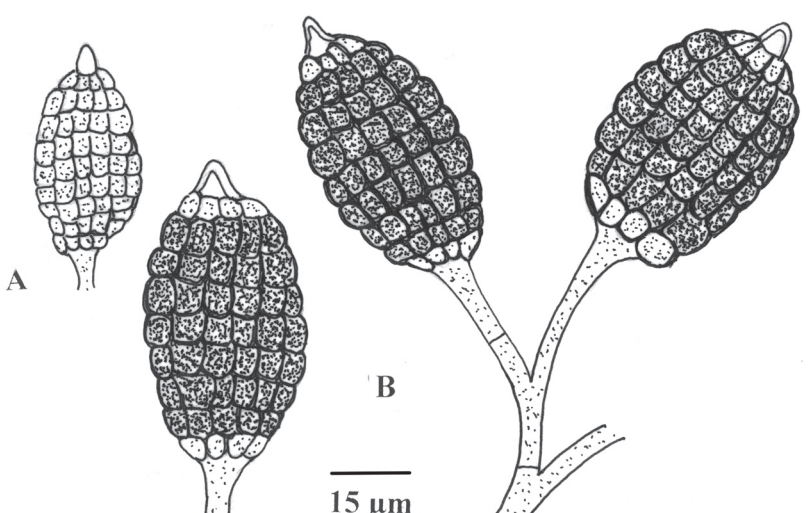

Fig. 1. *Manoharachariella lignicola*. A. Young conidium. B. Mature conidia and conidiophore.

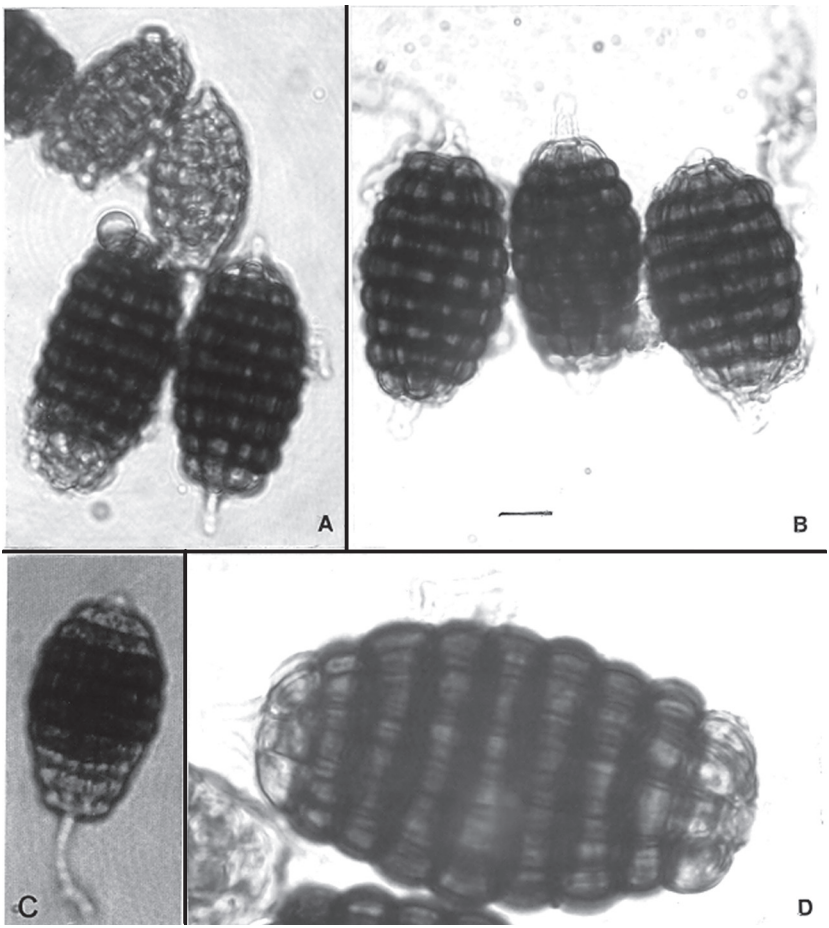

Fig. 2. *Manoharachariella lignicola*. A-C. Bar = 10 µm. D. Bar = 5 µm.

Colonies effuse, thin, pale brown to mid brown, hairy, spreading to few millimeters on the host substratum. Mycelium immersed, composed of groups of brown, branched, smooth, 3–4.5 µm thick hyphae present in the subepidermal region of the host substrate. Conidiophores macronematous, mononematous, sparsely branched, branches loosely fasciculate arising both laterally and apically from the immersed hyphal cells, erect, usually flexuous, septate, septa few, 1–3, hyaline, to sub-hyaline, up to 35 µm long and 3–4.5 µm thick. Conidiogenous cells monoblastic, integrated, indeterminate, terminal and lateral, cylindrical, hyaline to sub-hyaline, 2.5-3.5 µm long. Conidia solitary, dry, acrogenous and acropleurogenous, simple, doliiform, obpyriform,

ellipsoidal, apiculate, dictyoseptate, smooth, tiered, transverse septa 7–9, several longitudinal septa, young conidia uniform in colour, sub-hyaline to pale brown, mature conidia mid-brown to dark brown except 1–2 tier of cells at the apical and basal region which are sub-hyaline to pale brown, middle part of the conidium often dark blackish brown almost obscuring the septation, apiculus one celled, thick walled, hyaline to sub hyaline, 3.2–5.5 µm long, 3.5–5.5 µm wide, conidia 42.5–50.5 µm long, 25–32 µm wide at the broadest part.

The genus, *Manoharachariella* shows some resemblance with *Septosporium* Corda in general and with *Septosporium rostratum* M.B. Ellis (Ellis 1961) in particular in having dictyoseptate, beaked conidia but differs from them in the absence of setae, unbranched conidiophores and percurrent conidiogenous cells. It also shows resemblance in shape with *Xenosporium africanum* Piroz. (Deighton & Pirozynski 1966) and *X. boivinii* S. Hughes (Hughes 1978) but differs from them in producing monoblastic, acrogenous/acropleurogenous, obpyriform, apiculate, smooth and dictyoseptate conidia which are transverse and longitudinally septate. It also differs from *Xenosporium* Penz. & Sacc. in the absence of secondary conidia.

Manoharachariella is comparable with *Bioconiosporium* Bat. & J.L. Bezerra (Ellis 1976) in having solitary, dry, acropleurogenous, doliiform, dictyoseptate conidia, but differs from it in conidia being monoblastic with a single beak, whereas two protuberances are present in *Bioconiosporium. Manoharachariella* is slightly comparable to *Monodictys* S. Hughes (Ellis 1971) in having dictyoseptate, monoblastic, dry, acrogenous conidia but differs from it in conidia being apiculate and tiered. There is no other fungus that can accommodate the newly proposed taxon. The present fungus is unique in having effuse, thin colonies, immersed mycelium, sparsely branched conidiophores; monoblastic, acroauxic conidiogenous cells; doliiform, dictyoseptate, tiered, brown to dark brown, apiculate conidia having 1–2 tier of hyaline or sub hyaline cells at the apical and basal end. Hence it is proposed as *Manoharachariella* gen. nov.

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